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Checklist

Checklist of Orchidaceae from Caquetá, Colombia

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Abstract

A checklist of Orchidaceae from Caquetá, Colombia is presented here. We recorded 98 genera and 418 species, exceeding a previous inventory by 276 species. The checklist is conservative in the number of genera and species by including only taxa that were fully and reliably identified and that are either linked to a corresponding herbarium voucher, a living collection specimen or a photo taken in the field and published in iNaturalist by one of the authors or a collaborator. The documented species diversity in the region could dramatically increase in the next few years with additional collecting efforts in the eastern slopes of the Andes nested in Caquetá. About 9% (418/4600) of all Orchidaceae species recorded for Colombia are reported for this area, showing the important contribution to orchid diversity of Andean-Amazonian foothills of Caquetá.

Key words: Alpha diversity, Amazon, Andes, floristic studies, foothills, orchids

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Introduction

Orchidaceae are one of the most diverse and widely distributed flowering plant families including 25,000–27,000 species and 880 genera (Chase et al. 2015). Colombia has the largest diversity of orchid species in the American tropics (Pérez-Escobar et al. 2022a), hosting ~ 4,600 species that represent ~18% of the known species diversity in the family. The highest level of species richness arises in the northern Andes region of the country (Pérez-Escobar et al. 2022a), where a large number of endemic species occur, accounting for 36.8% of the total species reported for Colombia. With new orchid novelties published annually (Ortiz Valdivieso et al. 2009; Hágsater et al. 2013; Pérez-Escobar et al.

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2021, 2022b; Vieira-Uribe and Moreno 2022), Colombia is a hotspot for biodiversity conservation (Betancur et al. 2015).

Caquetá, one of Colombia's 32 Departments, is a largely unexplored region with an extraordinary ecosystem diversity, geographically presenting a variety of landscapes, topographic forms and different types of associated vegetation and water sources, including the Amazon plains, valleys, hills, foothills and mountain ranges (Fig. 1). The Department contains four national natural parks, covers part of the Chiribiquete World Heritage Park and 35 recognised

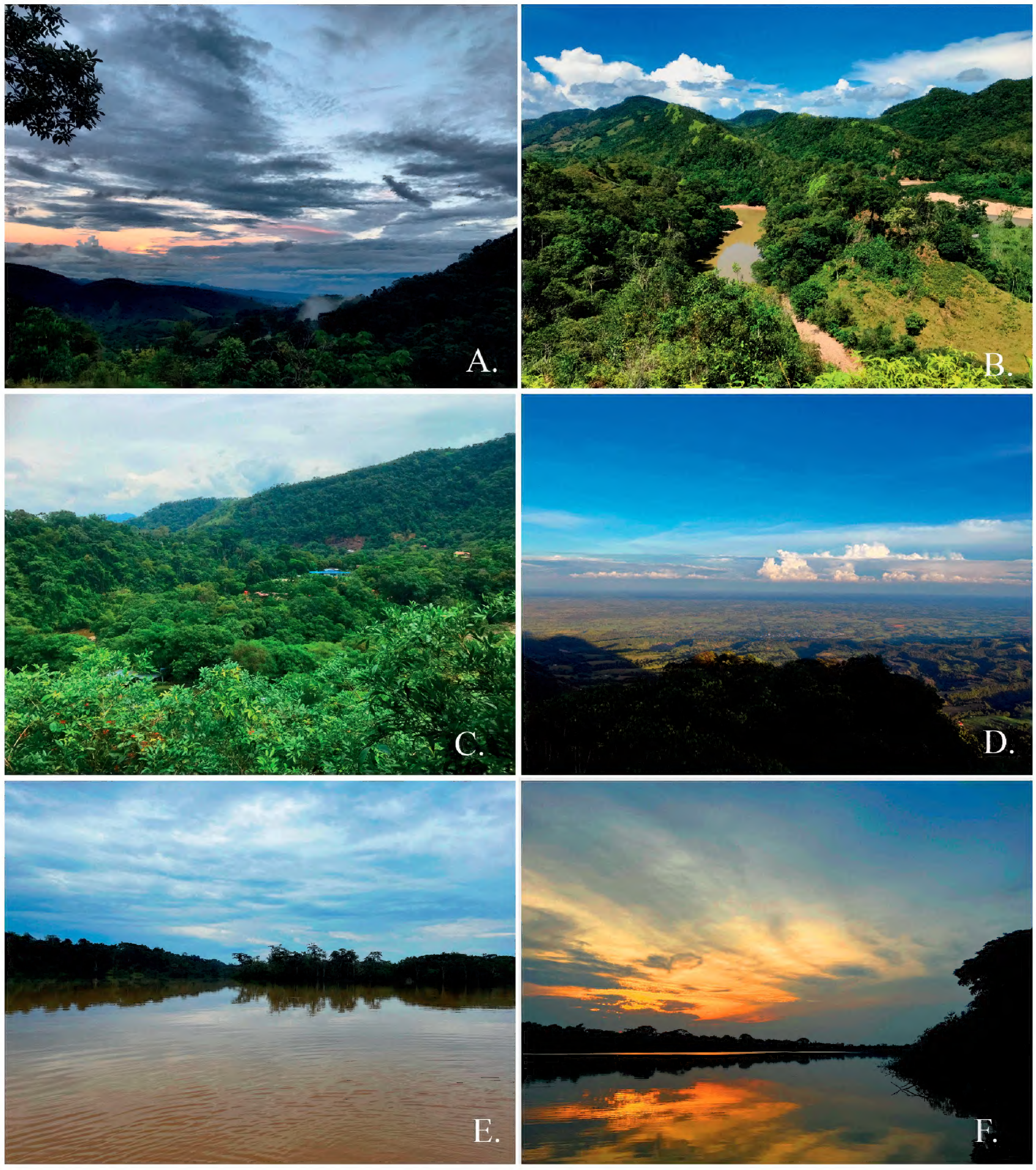

Figure 1. Representative landscapes from Caquetá, Colombia. **A** general view of the Andean Piedmont in the Municipality of Florencia **B** Hills and rivers coming down from the eastern slopes of the Andes and flowing into the Amazonian Forest in the Municipality of Belen de los Andaquíes, the Pescado River **C** Hilly slopes from the Andean Piedmont transitioning to the Amazon Forest in the Municipality of Belen de los Andaquíes **D** General view of Amazonia Forest from a hilly slope of the eastern Andes, in the Municipality of Paujíl **E, F** Amazonian waterlogged Forest at La Laguna de Peregrinos, Municipality of Solano.

civil society reserves (RUNAP 2022, webpage checked June 2023). Caquetá is placed in the eastern slopes of the Andean foothills, a confluence zone of mountainous and lowland Amazonian landscapes with different communities' composition. The Andean foothills of Caquetá range between 200 and 1000 m a.s.l.

The Colombian Eastern Andean Mountain range transitions along an environmental gradient from foothills to either the Guyana Shield (Meta and Caquetá), the Amazon Basin (Caquetá, Putumayo and Amazonas) or the Orinoco Basin (Arauca, Casanare and Meta) (Hoorn et al. 2010). These ecotones are hyperdiverse because of the evolutionary, biogeographical and ecological processes that operate in a rich array of landscapes (Ruiz et al. 2007; Instituto Geográfico Agustín Codazzi 2010). It is perhaps in the confluence of lowland and mountainous landscapes where the greatest wealth of plant species diversity and endemism occurs in the country (Ruiz et al. 2007; Pérez-Escobar et al. 2022a), but the limited existing orchid inventories underestimate the region's species diversity.

Although Orchidaceae are diverse within Caquetá, few checklists and taxonomic studies focusing on this group are available. For example, the Catalogue of Plants and Lichens of Colombia (Bernal et al. 2016), reported a total of 104 orchid species, whereas "The National Orchid Conservation Plan" presented a count of 142 species (Betancur et al. 2015). Currently, Caquetá is severely affected by deforestation driven by anthropogenic transformations of the natural ecosystems (Jaramillo-Castelblanco 2016; IDEAM 2020). Biological diversity inventories of the Andean-Amazonian Region are, thus, crucial to provide information for habitat conservation strategies in the region.

In this study, we generated a detailed species list of Orchidaceae for the Department of Caquetá, one of the most unexplored areas in Colombia, due to, amongst other factors, difficulties such as security risks and lack of easy access routes to some of its regions and municipalities. This is a collective work developed by more than twelve Colombian botanists during 2019–2023, under the umbrella project "Orquídeas para la Paz" (Orchids for Peace). This programme aims to explore, reproduce and support orchid species recovery, while developing sustainable strategies for business, based on horticulture for vulnerable communities around Colombia. Data obtained here come from living collections, photographs taken from field and an extensive review of herbarium collections around the world.

Methods

Study area

Caquetá is located in south-western Colombia, between latitudes 0.7°S–2.9°N and longitudes 71°–76°W. It comprises 16 municipalities including Florencia, Belén de los Andaquíes, El Paujil, Doncello and La Montañita, amongst others (Table 1). This region contains a variety of landscapes and ecosystems ranging from the Eastern Cordillera of the Andes to the Amazonian plains, with elevations ranging from 0–3200 m a.s.l. The mean annual rainfall is about 2179 mm. The mean annual temperature ranges from 27–29 °C (Instituto Geográfico Agustín Codazzi 2010) (Fig. 1).

Table 1. Checklist of the Orchidaceae of Caquetá, Colombia. ALB: Albania, BEL: Belen de los Andaquies, CAR: Cartagena el Chaira, CUR: Curillo, DON: Doncello, FLO: Florencia, MIL: Milan, MOR: Morelia, PAU: Paujil, PRC: Puerto Rico, SJF: San Jose del Fragua, SOL: Solano, STA: Solita, SVC: San Vicente del Caguán, VAL: Valparaiso. * Endemic to Colombia ** New report for Colombia.

Species name	Accessions reviewed	Area
Acianthera casapensis (Lindl.) Pridgeon & M.W. Chase	iNaturalist	BEL
Acianthera ciliata (Knowles & Westc.) F. Barros & L. R. S. Guim.	*Pabon M. 320* (COAH), *Arias T. 851, 852, 914* (HUAZ)	SOL, VAL
Acianthera discophylla (Luer & Carnevali) Luer	Living collection (El Manantial, Florencia)	SOL
Acianthera erinacea (Rchb. f.) A. Doucette	*Arias T. 951, Chaux-Varela J. 61* (HUAZ)	FLO, PAU, SVC
Acianthera sicaria (Lindl.) Pridgeon & M. W. Chase	*Arias T. 917* (HUAZ)	FLO
Aganisia cyanea (Lindl.) Rchb.f.	*Arevalo R. 406* (COAH), *Vasco A. 389, 396, 360, 420* (HUA), *Trujillo E. 1043* (HUAZ)	BEL, SOL
Aganisia fimbriata Rchb.f.	*Torres M.M. 1084* (COAH), *Mesa N. & Trujillo E. 24* (HUAZ)	FLO, SOL
Anathallis acuminata (Kunth) Pridgeon & M. W. Chase	*Benavides A. 506* (HUA), *Arias T. 969* (HUAZ)	DON, SOL
Anathallis brevipes (H. Focke) Pridgeon & M. W. Chase	*Arias T. 906* (HUAZ)	CAR
Anathallis spiculifera (Lindl.) Luer	*Sanchez M. 1834, 1835* (COAH)	SOL
Anathallis sclerophylla (Lindl.) Pridgeon & M. W. Chase	iNaturalist	SVC
Aspidogyne clavijera (Rchb. f.) Meneguzzo	*Cardenas D. 45472* (COAH)	MOR
Aspidogyne confusa (C. Schweinf.) Garay	*Castro F. 9890* (COAH)	SOL
Aspidogyne foliosa (Poepp. & Endl.) Garay	*Trujillo E. 7026, 7109* (CUVC)	ALB
Aspidogyne jamesonii (Garay) Meneguzzo	*Romero 4050* (COL)	CAR
Batemannia colleyi Lindl.	*Arevalo R. 43* (COL), *Vasco A. 158* (HUA)	FLO, SOL
Beloglottis costaricensis Schltr.	iNaturalist	FLO
Bifrenaria clavigera Rchb.f.	*Trujillo E.* 1043 (COAH)	BEL
Bifrenaria longicornis Lindl.	*Arbelaez E.* 907 (COAH), *Arevalo R. 417* (COL), *Vasco A. 264* (HUA)	SOL
Braemia vittata (Lindl.) Jenny	*Duivenvoorden J. 2362*, *Torres M. 1128* (COAH), *Benavides A. 634* (HUA)	SOL
Brachionidium lehmannii Luer **	*Arias T. 952* (HUAZ)	PAU
Brassia caudata (L.) Lindl.	*Ortiz-Valdivieso M. 596* (HPUJ), *Arias T. 857* (HUAZ)	BEL
Bulbophyllum lehmannianum Kraenzl.	*Arevalo R. 363* (COL)	FLO
Campylocentrum kuntzei Cogn. ex Kuntze	*Correa M. 7136* (COAH, HUAZ)	FLO
Campylocentrum micranthum (Lindl.) Maury	iNaturalist	SVC
Catasetum discolor (Lindl.) Lindl.	*Arbelaez E. 238* (HUA), *Idobro J. M. 9001* (COL), *Arevalo R. 311* (COL), *Sastre R. D. 5173* (P)	SOL
Catasetum ochraceum Lindl.	*Gonzalez M. F. 2680, 2710* (COL)	SOL
Catasetum roseo-album (Hook.) Lindl.	*Barbosa C.* 7716 (FMB)	SOL
Catasetum tabulare Lindl.	*Perdomo O.* 430 (CUVC)	FLO
Catasetum tuberculatum Dodson C.	*Aguilar M. 253* (COAH), *Arias T. 858* (HUAZ)	FLO
Catasetum villegasii G. F. Carr	*Carr G. F.* (COAH, USF)	SVC
Cattleya crispa Lindl. **	Living collection (El Manantial, Florencia)	CAR, SJF
Cattleya violacea (Kunth) Rolfe	*Trujillo E. 808, Calderon A. A. 263* (HUAZ)	CAR
Chondrorhyncha rosea Lindl.	*Schmidt-Mumm K. s.n.* (LA)	FLO

Species name	Accessions reviewed	Area
Cleistes abdita G. A. Romero & Carnevali	*Palacios P. 582, Castaño N. 3184* (COAH)	FLO, SOL
Cleistes rosea Lindl.	*Jaimes M. S. 1269* (COAH), *Sanin D. 6454* (COL), *Perdomo O. 256* (CUVC), *Cumaco L. S. & Trujillo E. 42, Arias T. 990, Chaux-Varela J. 96* (HUAZ)	FLO, PAU
Cleistes tenuis (Griseb.) Schltr.	*Aguilar M. 253* (COAH)	SOL
Coryanthes leucocorys Rolfe	iNaturalist	BEL, FLO
Cranichis polyantha Schltr.	*Madero 22* (AMES)	N/A
Cryptarrhena lunata R. Br.	iNaturalist	FLO
Cycnoches egertonianum Bateman	*Perdomo O. 387* (CUVC)	FLO
Cycnoches haagii Barb. Rodr.	*Dodson C. 3249* (COAH)	DON
Cyrtochilum caquetanum P. Ortiz-Valdivieso M, L. E. Álvarez & A. J. Carrillo	*Ortiz-Valdivieso M. 1393* (HPUJ)	N/A
Cyrtochilum cimiciferum (Rchb. f.) Dalström	iNaturalist	SVC
Cyrtochilum divaricatum (Lindl.) Dalström	iNaturalist	SVC
Cyrtochilum flexuosum Kunth	*Ramirez J. G. 5282* (JAUM), *Gentry A. et al. 9046* (MO)	FLO
Cyrtochilum meirax (Rchb. f.) Dalström	*Perdomo O. 416, 404* (CUVC), *Arias T. 925, 954, Chaux-Varela J. 58, 60, 92*(HUAZ)	FLO, PAU, PRC
Cyrtochilum midas Dalström	*Perdomo O. 0195* (CUVC)	FLO
Cyrtochilum orgyale Kraenzl.	iNaturalist	SVC
Cyrtochilum porrigens (Rchb. f.) Kraenzl.	*Perdomo O. 394, 400* (CUVC), *Calderon A. 250, 251* (HUAZ)	PRC, FLO
Cyrtochilum ramosissimum (Lindl.) Dalström	*Trujillo E. 7587* (CUVC)	PRC
Cyrtochilum scabiosum Kraenzl.	*Cuatrecasas J. 8466* (COL)	FLO
Cyrtochilum trifurcatum Kraenzl.	*Perdomo O. 412* (CUVC)	PRC
Cyrtochilum undulatum Kunth	iNaturalist	FLO
Cyrtochilum ventilabrum Kraenzl.	*Perdomo O. 393* (CUVC)	PRC
Cyrtopodium cristatum Lindl.	*Betancur J. 1548* (HUA)	SVC
Cyrtopodium palmifrons Rchb. f. & Warm.	Living collection (El Caraño, Florencia)	FLO
Dichaea ancoraelabia C. Schweinf	*Perdomo O. 267* (CUVC), *Ortiz-Valdivieso M. 531* (HPUJ), *Mesa N. & Trujillo E. 03 Arias T. 877* (HUAZ)	BEL, FLO, SOL
Dichaea caquetana Schltr. *	*Fernández-Pérez A.* 7240 (COL)	FLO
Dichaea hystricina Rchb.f.	*Castaño N.* 8705 (COAH)	BEL, FLO
Dichaea panamensis Lindl.	*Dueñas H. 3060* (COL), *Vasco A. 387* (HUA)	SOL
Dichaea pendula (Aubl.) Cogn.	*Castaño N. 8678* (COAH), *Betancur J. 1916* (COL, HUA)	BEL, SVC
Dichaea picta Rchb.f.	*Jimenez E. 11* (COAH)	FLO
Dichaea rendlei Gleason	*Franco-Rosselli P. 3825* (COL), *Vasco A. 220, 267, 304* (HUA), *Betancur J. 13560* (COAH)	SOL
Dichaea sodiroi Schltr.	*Ortiz-Valdivieso M. 553* (HPUJ)	FLO
Dichaea splitgerberi Rchb.f.	*Trujillo E. 956* (COAH, FMB), *Castaño N. 1761, Cardenas D. 40460, 44494, 48527* (COAH)	BEL, PRC, SVC, VAL
Dichaea trinitensis Gleason **	*Arias T. 885* (HUAZ)	SOL
Dichaea trulla Rchb.f.	*Cardenas D. 42199* (COAH), *Betancur J. 20668, Arevalo R. 98, 306* (COL), *Vasco A. 305* (HUA), *Perez* 663 (FMB)	BEL, FLO, SOL
Dimerandra emarginata (G. Mey.) Hoehne	*Arias T. 859* (HUAZ)	FLO
Dracula alcithoe Luer & R. Escobar	iNaturalist	BEL
Duckeella adolphii Porto & Brade	*Pabon M. 461, 462, Echeverry R. 3297, Palacios P. 691, 537, 1218, Duivenvoorden J. 263* (COAH), *Arbelaez E. 64* (HUA)	SOL
Duckeella caquetana Szlach. & Kolan. *	*Arbelaez M. V. 64* (COAH, UGDA)	SOL
Duckeella fernandezii Szlach., Kolan. & Baranow *	*Fernandez 20065* (COL, UGDA)	SOL

Species name	Accessions reviewed	Area
Elleanthus amethystinoides Garay	*Cardenas D. 20257* (COAH)	BEL
Elleanthus ampliflorus Schltr.	*Arias T. 1201* (HUAZ)	FLO
Elleanthus aurantiacus Rchb.f.	*Castaño N. 7442, 8608, Cardenas D. 46146* (COAH), *Mason H. L. 13954, Gentry A. 9036* (COL), *Arias T. 1211* (HUAZ)	BEL, FLO. SOL
Elleanthus blatteus Garay	*Arias T. 980, 1193, 1217* (HUAZ)	DON, FLO
Elleanthus columnaris Rchb.f.	*Fonnegra R. 5465* (HUA, MO)	FLO
Elleanthus conifer (Rchb.f. & Warsz.) Rchb.f.	*Jimenez E. 26* (COAH)	FLO
Elleanthus emberanus (Szlach. & Kolan.) J. M. H. Shaw *	*Trujillo W. et al. 968* (COAH)	BEL
Elleanthus fractiflexus Schltr.	*Castaño N. 8720, Betancur J. 20388, 20544* (COAH), *Arias T. 1188* (HUAZ)	BEL, FLO
Elleanthus graminifolius (Barb.Rodr.) Lojtnant	*Cardenas D. 20682, Perdomo O. 318, Betancur J. 20682* (COAH) *Perdomo O. 318* (CUVC)	BEL, FLO
Elleanthus kermesinus Rchb. f.	*Cuatrecasas J. 8766* (COL)	FLO
Elleanthus lancifolius C. Presl.	*Ortiz-Valdivieso M. 459* (HPUJ), *Araujo E. & Trujillo E. 28* (HUAZ)	BEL, FLO
Elleanthus oliganthus Rchb.f.	*Vargas V. A. 99* (COAH), *Cardenas D. 42099* (FMB), *Cumaco L. S. & Trujillo E. 34, Santofimio L. M. & E. Trujillo E. 04* (HUAZ)	BEL, FLO
Elleanthus robustus Rchb. f.	*Arias T. 1190* (HUAZ)	FLO
Elleanthus tillandsioides Barringer	*Trujillo W. 968* (FMB), *Cardenas D. 41786, 41817* (COAH)	BEL
Encyclia aspera Schltr.	*Arevalo R. 210* (COL), *211* (COAH)	SOL
Encyclia chloroleuca Neumann	Living collection (El Caraño, Florencia)	FLO
Encyclia leucantha Schltr.	*Pabon M. 927, Arbelaez E. 787* (COAH)	SOL
Encyclia pilosa (C. Schweinf.) Carnevali & I. Rámirez	*Arbelaez E. 389* (COAH)	SOL
Epidendrum acuminatum Ruiz & Pav.	*Ortiz-Valdivieso M. 4171* (HPUJ)	FLO
Epidendrum acutilobum Hágsater E. & Uribe Veléz *	*Kapuler & Hascall 168* (COL), *Arias T. 979* (HUAZ)	FLO, DON
Epidendrum amazonicoriifolium Hágsater E.	*Cardenas D. 40246* (COAH)	FLO
Epidendrum angulatum Hágsater E. & J. Duarte *	*Moreno s.n.* (AMO)	FLO
Epidendrum angustatum (T. Hashim.) Dodson C.	*Ortiz-Valdivieso M. 461* (HPUJ)	FLO
Epidendrum arachnoglossum Rchb. f. ex André	*Arbelaez E. 53* (HUA)	SOL
Epidendrum arevaloi (Schltr.) Hágsater E.	*Hágsater E. s.n. (AMO), Ortiz-Valdivieso M. 473* (HPUJ), *Arias T. 1196* (HUAZ)	FLO
Epidendrum armeniacum Lindl. **	*Perdomo O. 302* (CUVC)	FLO
Epidendrum aura-usecheae Hágsater, Rinc. -Useche & O. Pérez	*Arias T. 1014* (HUAZ)	SVC
Epidendrum barbeyanum Kraenzl.	*Ortiz-Valdivieso M. 462* (HPUJ)	FLO
Epidendrum borealistachyum Hágsater E., E. Santiago & C. Fernandez	*Sanin D. 6361* (COAH), *6100* (COL), *6558, 6632* (HUA), *Correa M. & Aldana J. 7196, Mesa N. & Trujillo E. 16 Arias T. 1199* (HUAZ)	FLO
Epidendrum brachyrepens Hágsater E. **	*Betancur J. 2225* (HUA)	SVC
Epidendrum caesaris Hágsater E. & E. Santiago	*Estrada J. 668* (COL)	SOL
Epidendrum calanthum Rchb.f. Warsz.	*Barbosa C. 8140* (COL)	SOL
Epidendrum calyptrandium Hágsater E., H. Medina & Huamantupa	*Cardenas D. 41772* (COAH, FMB)	BEL
Epidendrum chorandrochilum F. Lehm. & Kraenzl.	*Perdomo O. 235* (CUVC)	FLO
*Epidendrum cleistocoleu*m Hágsater E. & E. Santiago	iNaturalist	SVC
Epidendrum cochlidium Lindl.	*Jimenez E. 1* (HUA)	FLO
Epidendrum compressibulbum D. E. Benn. & Christenson **	*Arias T. 926* (HUAZ)	FLO

Species name	Accessions reviewed	Area
Epidendrum compressum Griseb.	*Cuatrecasas J. 27127* (COL), *Trujillo W. 816* (HUA), *Mesa N. & Trujillo E. 18* (HUAZ)	CAR, FLO
Epidendrum × *communis* Hágsater Ined	*Arias T. 997; 998* (HUAZ)	SVC
Epidendrum coronatum Ruiz & Pav	*Arias T. 863* (HUAZ)	CAR, SJF
Epidendrum cuneatum Schltr.	*Arias T. 960* (HUAZ)	CAR, SJF
Epidendrum cupreum F. Lehm. & Kraenzl.	*Ortiz-Valdivieso M. 573* (HPUJ)	FLO
Epidendrum cylindraceum Lindl.	*Arias T. 1204* (HUAZ)	FLO
Epidendrum erosum Ames & C. Schweinf.	*Hoyos s.n.* (AMO)	FLO
Epidendrum excisum Lindl.	iNaturalist	SVC
Epidendrum flexuosum G. Mey.	iNaturalist	SVC
Epidendrum filamentosum Kraenzl.	*Perdomo O. 272, 413* (CUVC) *Arias T. 988*, *Chaux-Varela J. 34, 98* (HUAZ)	FLO, DON
Epidendrum fimbriatum Kunth	*Arias, T. 1198, Calderon A. 256* (HUAZ)	FLO
Epidendrum geminiflorum Kunth	iNaturalist	SVC
Epidendrum ibaguense Kunth	*Cardiel J. M. 59* (COL), *Arias T. 993* (HUAZ)	DON, FLO, SOL
Epidendrum lacustre Lindl.	*Forero E. 9816, Palacios P. 859, 1192, 1201, 1226, Arbelaez E. 53, 731, Duivenvoorden J. 607, Sanin D. 6362* (COAH), *Restrepo D. 344* (HUA)	FLO, SOL
Epidendrum longicolle Lindl.	*Cumaco L. S. & E. Trujillo E. 16* (HUAZ)	FLO
Epidendrum macrocarpum Rich.	*Marin C. 2896* (COAH, COL), Velayos M. 6455 (COL)	FLO, MOR, SOL
Epidendrum macrum Dressler	*Ortiz-Valdivieso M 528* (HPUJ, AMO)	FLO
Epidendrum magnicallosum C. Schweinf.	*Arevalo R. 46, 91, 165* (COL)	SOL
Epidendrum mamapachae Hágsater, F.O. Espinosa & E. Santiago *	iNaturalist	SVC
Epidendrum melinanthum Schltr.	*Plazas L. L. et al. 42* (HUAZ)	FLO
Epidendrum microcapitellatum Hágsater, Medina Tr. & E. Santiago *	iNaturalist	FLO
Epidendrum micronocturnum Carnevali & G.A. Romero	*Arevalo R. 40* (COL)	SOL
Epidendrum microphyllum Lindl.	*Arevalo R. 201* (COL)	SOL
Epidendrum mora-retanae Hágsater E.	Living collection (El Caraño, Florencia)	FLO
Epidendrum myrmecophorum Barb. Rodr.	*Perdomo O. 275, 284* (CUVC), *Arbelaez E. 256, 379* (HUA)	CAR, FLO, MOR, SOL
Epidendrum nocturnum Jacq.	*Arbelaez E. 888, Franco-Rosselli P. 3730, Sanchez M. 1943, 1942, 1941* (COAH), *Cardenas D. et al. 42156* (FMB), *Arias T. 874–876, 959, Trujillo E. 815* (HUAZ)	BEL, CAR, DON, FLO, SJF, SOL
Epidendrum orbiculatum C. Schweinf.	*Ortiz-Valdivieso M. 573* (HPUJ)	SVC
Epidendrum orchidiflorum Salzm. ex Lindl.	*Arbelaez E. 730, 815, 776, Cardenas D. 45063, 48634, Sanin D. 6642* (COAH), *Davidse G. 5612, Hermann F. J. 11257, Manson H. L. 13949* (COL), *Arbelaez E. 379* (HUA), *Araujo D. & Trujillo E. 17, Arias T. 865, Croat T. et al. 100480* (HUAZ)	CAR, FLO, SOL
Epidendrum porphyreonocturnum Hágsater & R. Jiménez	*Perdomo O. 179* (CAUP)	FLO
Epidendrum portokalium Hágsater E. & Dodson C.	*Cuatrecasas J. 9002* (COL)	FLO
Epidendrum putumayoense Hágsater E. & L. Sanchéz	*Valencia E. & Hágsater E. 11640* (AMO)	N/A
Epidendrum radicans Pav. ex Lindl.	*Polania O. L. & Trujillo E. 5* (HUAZ)	FLO
Epidendrum rhodochilum (Schltr.) Hágsater E. & Dodson C.	*Trujillo W. s. n.* (AMO)	BEL

Species name	Accessions reviewed	Area
Epidendrum rhombochilum L.O. Williams	*Betancur J. et al. 20224* (COAH)	BEL
Epidendrum rigidum Jacq.	*Ortiz-Valdivieso M. 471* (HPUJ), *Polania O. L. & Trujillo E. 1, Cumaco L. S. & Trujillo E. 15* (HUAZ), *Groenendijk J. s.n.* (MA)	FLO, SOL
Epidendrum rugulosum Schltr.	*Sanin D. 6640* (HUA)	FLO
Epidendrum sanctae-rosae Hágsater E., Sauleda, Uribe Vélez & E. Santiago	*Perdomo O. 322, 424* (CUVC)	FLO
Epidendrum saxatile Lindl.	*Trujillo E. et al. 1038* (COAH), *Arias T. 967* (HUAZ)	BEL, DON
Epidendrum sculptum Rchb.f.	*Cardenas D. 41772* (COAH, FMB)	BEL
Epidendrum secundum Jacq.	*Betancur J. 20457* (COAH), *Correa M. et al. 4605* (HUAZ), *Barbosa C. et al. s.n.* (MA)	BEL, FLO, PRC, SOL
Epidendrum spilotum Garay & Dunst.	*Escobar R. 5270* (AMO)	N/A
Epidendrum stenobractistachyum Hágsater E. & E. Santiago	*Cuatrecasas J. 8426* (COL)	FLO
Epidendrum strobiliferum Rchb.f.	*Cardenas D. 46422* (COAH)	SOL
Epidendrum teuscherianum A. D. Hawkes **	*Chaux-Varela J. 102, 103, 108* (HUAZ)	DON
Epidendrum tridens Poepp. & Endl.	*Franco-Rosselli P. et al. 3730* (COL)	SOL
Epidendrum tumuc-humaciense (Veyret) Carnevali & G. A. Romero	*Arbelaez E. & Castro F. 888, Barbosa C. et al. 8154, Castro Viejo F. et al. 335, Franco-Rosselli P.* et al. *3636* (COL)	SOL
Epidendrum uleinanodes Hágsater E. **	*Groenendijk 33* (COAH)	SOL
Epidendrum vinosum Schltr. **	iNaturalist	PAU
Epidendrum whittenii Hágsater E. & Dodson C.	*Coca et al. 9207b* (FAUC)	SJF
Epistephium hernandii Garay	*Arbelaez E. 276* (COAH)	SOL
Epistephium parviflorum Lindl.	*Castro F. 10974, Palacios P. 864* (COAH)	SOL
Epistephium subrepens Hoehne	*Duivenvoorden J. 215, Gentry A. 65171, Ospina H. 1141, Palacios P. 581, 760, 2437, Restrepo D. 9* (COAH)	SOL
Eriopsis biloba Lindl.	*Arbelaez E. 172* (COAH), *Palacios P. 2415* (COL), *Barbosa C. 7631* (FMB)	SOL
Eriopsis sceptrum Rchb.f. & Warsz.	*Cardenas D. 46424* (COAH)	SOL
Erycina glossomystax (Rchb.f.) N. H. Williams & M. W. Chase	*Arias T. 961* (HUAZ)	DON
Erycina pumilio (Rchb. f.) N. H. Williams & M. W. Chase	*Atwood J. T. & Mora D. s.n.*	N/A
Erycina pusilla (L.) N. H. Williams & M. W. Chase	*von Sneidern K. 1075, Castroviejo S. 322, Perez-Arvelaez E. 370* (COL), *Betancur J. 2349* (HUA)	BEL, FLO, SVC
Eulophia alta (L.) Fawc. & Rendle	*Perdomo O. 342* (CUVC), *Betancur J. 2214* (HUA)	BEL, SVC
Galeandra macroplectra G. A. Romero & Warford	*Galeano G. 2249* (COL)	SOL
Galeandra stangeana Rchb. f.	*Franco-Rosselli P. 3860* (COL)	SOL
Galeottia negrensis Schltr.	*Mendoza H. 10283, Cardenas D. 48408* (COAH)	SOL, SVC
Gongora atropurpurea Hook.	iNaturalist	SVC
Gongora portentosa Linden & Rchb. f.	Living collection (El Caraño, Florencia)	FLO
Habenaria mesodactyla Griseb.	*Franco-Rosselli P. 2410* (COL)	SOL
Habenaria monorhiza Rchb. f.	*Orozco C. I. 2768* (COL), *Goudot J. s.n.* (P), *Arias T. 756, 992, 1011, Chaux-Varela J. 107* (HUAZ)	FLO, DON, PAU, PRC, SOL, SVC
Habenaria pratensis Rchb. f.	iNaturalist	CAR
Houlletia lowiana Rchb. f.	*Cardenas D. 46013* (COAH)	BEL
Houlletia sanderi Rolfe	*Perdomo O.* 307 (CUVC)	FLO
Hylaeorchis petiolaris (Schltr.) Carnevali & G. A. Romero	iNaturalist	BEL

Species name	Accessions reviewed	Area
Ionopsis satyrioides (Sw.) Rchb.f.	*Perdomo O. 345* (CUVC)	ALB, BEL
Ionopsis utricularioides (Sw.) Lindl.	*Trujillo E. 846* (COAH), *Idobro J. M. 8590* (COL)	CAR
Jacquiniella globosa (Jacq.) Schltr.	Living collection (El Caraño, Florencia)	FLO
Jacquiniella teretifolia (Sw.) Britton & P. Wilson	*Betancur J. 20543, 20658* (COAH)	BEL, FLO
Koellensteinia graminea Rchb.f.	*iNaturalist*	SVC
Laelia rosea (Lindl.) C.Schweinf.	*Calderon A. 260, 261, Chaux-Varela J. 43* (HUAZ)	CAR, FLO
Lepanthes agglutinata Luer	*Cardenas D. 41869* (COAH, FMB, MO, NYCB), *Trujillo E. 7691, 7705, 7949* (CUVC)	BEL, FLO, PRC
Lepanthes auriculata Luer	*Trujillo E. 7693* (CUVC)	PRC
Lepanthes delhierroi Luer & Hirtz **	*Arias T. 1186* (HUAZ)	FLO
Lepanthes florenciana J. S. Moreno & Hoyos *	*Hoyos D., López O. & Fonseca A. 945* (COAH, HUAZ)	FLO
Lepanthes forceps Luer & R. Escobar	Living collection (El Caraño, Florencia)	FLO
Lepanthes hirtzii Luer	*Trujillo E. 7687* (CUVC)	PRC
Lepanthes mucronata Lindl.	*Arias T. 1234* (HUAZ)	FLO
Lepanthes nontecta Luer **	iNaturalist	SVC
Lepanthes tachirensis Foldats	*Arias T. 1232* (HUAZ)	FLO
Lepanthes wageneri Rchb. f.	*Trujillo E. 7689* (CUVC)	PRC
Lockhartia acuta Rchb.f.	iNaturalist	CAR
Lockhartia micrantha Rchb. f.	*Betancur J. 2226* (COL, HUA), *Arias, T. 989* (HUAZ)	DON
Lycaste fuscina Oakeley **	iNaturalist	SVC
Lycaste macrobulbon Lindl.	iNaturalist	SVC
Lycaste macrophylla Lindl.	iNaturalist	SVC
Lycomormium fiskei H.R. Sweet	*Ortiz-Valdivieso M. 1365* (HPUJ)	N/A
Lycomormium schmidtii Á. Fernández	*Fernandez 7248* (COAH)	FLO
Macradenia purpureorostrata G. Gerlach	*Romero 4082* (COL)	PRC
Macroclinium manabinum (Dodson C.) Dodson C. **	iNaturalist	FLO
Malaxis histionantha (Link, Klotzsch & Otto) Garay & Dunst.	iNaturalist	SVC
Masdevallia amanda Rchb. f. & Warsz.	*Perdomo O. 395* (CUVC), *Ortiz-Valdivieso M. 4185* (HPUJ), *Arias T. 1187* (HUAZ)	FLO, PRC
Masdevallia constricta Poepp. & Endl. **	iNaturalist	FLO
Masdevallia ensata Rchb. f.	*Trujillo E. 7698* (CUVC)	FLO
Masdevallia picturata Rchb.f.	*Arias T. 1230* (HUAZ)	FLO
Masdevallia tubulosa Lindl.	*Polania & Trujillo E. 10* (HUAZ), *Trujillo E. 7696* (CUVC)	FLO, PRC
Masdevallia virgo-cuencae Luer & Andreetta	*Perdomo O. 423* (CUVC)	FLO, SVC
Maxillaria acuminata Lindl.	*Perdomo O.* 199 (CUVC)	FLO
Maxillaria aequiloba Schltr.	*Trujillo E. 7561, Perdomo O. 399* (CUVC)	FLO, PRC
Maxillaria alba Lindl.	*Ortiz-Valdivieso M. 467* (HPUJ)	BEL
Maxillaria anceschiana Molinari	*Correa M & Trujillo E. 5344* (HUAZ)	FLO
Maxillaria aureoglobula Christenson	*Perdomo O. 292, 349* (CUVC), *Chaux-Varela J. 36* (HUAZ)	BEL, FLO
Maxillaria aurea (Poepp. & Endl.) L. O. Williams	*Cardenas D. 48633* (COAH), *Sanin D. 6569* (COL), *Perdomo O. 411* (CUVC), *Diaz et al. 38, Santofimio L. M. & Trujillo E. 12, Molina A. 31, Arias T. 1202* (HUAZ)	FLO, PRC
Maxillaria auyantepuiensis Foldats	*Trujillo W. 1041* (COAH), *Ortiz-Valdivieso M. 556* (HPUJ)	BEL, FLO
Maxillaria bicallosa (Rchb. f.) Garay	*Betancur J. 20637* (COAH), *Perdomo O. 370, 384* (CUVC), *Chaux-Varela J. 35* (HUAZ)	BEL, FLO
Maxillaria bolivarensis C. Schweinf.	*Trujillo E. 957* (COAH), *Perdomo O. 346, 382* (CUVC)	BEL, FLO

Species name	Accessions reviewed	Area
Maxillaria brachybulbon Schltr.	*Perdomo O. 285* (CUVC)	FLO
Maxillaria buchtienii Schltr.	*Perdomo O. 316* (CUVC)	FLO
Maxillaria camaridii Rchb. f.	*Cardenas D. 41896, 44563* (COAH), *Trujillo E. 812* (HUAZ)	BEL, CAR, FLO, SVC
Maxillaria carinulata Rchb. f.	*Santofimio L. M. & Trujillo E. 6* (HUAZ)	FLO
Maxillaria cassapensis Rchb. f.	*Perdomo O. 401, Trujillo E. 7700* (CUVC)	PRC
Maxillaria crassifolia (Lindl.) Rchb.f.	*Arevalo R. 68, 157, Franco-Rosselli P. 4153* (COL), *Perdomo O. 370* (CUVC)	BEL, SOL, PRC
Maxillaria cruentata (Arévalo & Bergq.) Molinari & Mayta *	*Arevalo R. 1080* (COL, WIS)	SOL, SVC
Maxillaria cryptobulbon Carnevali & J.T. Atwood	*Londoño 871* (UDBC)	PRC
Maxillaria cuzcoensis C. Schweinf. **	*Dodson C. 3255* (SEL)	FLO
Maxillaria discolor (G. Lodd. ex Lindl.) Rchb. f.	*Arevalo R.218, Betancur J. 20650, Pabon M. 544*(COAH), *Vasco A. 342* (HUA), *Arias T. 848, 849, 853, 867, Chaux-Varela J. 38, Trujillo E. 806* (HUAZ)	BEL, SOL, CAR, PRC, SVC
Maxillaria dunstervillei Carnevali & I. Ramirez J. G. **	*Castaño N. 8572* (COAH)	BEL, PRC
Maxillaria ecuadorensis Schltr.	*Perdomo O. 274* (CUVC), *Santofimio L. M. & Trujillo E. 10* (HUAZ)	FLO
Maxillaria egertoniana (Bateman) Molinari	Living collection (El Manantial, Florencia)	SJF
Maxillaria embreei Dodson C.	*Castaño N. 8843* (COAH), *Perdomo O. 321* (CUVC), *Araujo D. & Trujillo E. 3, Arias T 1219* (HUAZ)	BEL, FLO, SOL
Maxillaria equitans (Schltr.) Garay	iNaturalist	CAR
Maxillaria erikae Molinari **	*Perdomo O. 0167* (CUVC)	FLO
Maxillaria exaltata (Kraenzl.) C. Schweinf.	*Ortiz-Valdivieso M. 4172* (HPUJ), *Araujo D. & Trujillo E. 32* (HUAZ)	FLO
Maxillaria fractiflexa Rchb. f.	*Perdomo O. 391* (CUVC)	PRC
Maxillaria imbricata Barb. Rodr.	*Arias, T. 957, 958, 970, 1016* (HUAZ)	DON, FLO, PAU, SVC
Maxillaria inaequisepala (C. Schweinf.) Molinari	*Prado et al. 614* (FMB)	SOL
Maxillaria kegelii Rchb.f.	*Arevalo R. 276* (COAH), *Correa M. 9932* (HUAZ)	SOL
Maxillaria lepidota Lindl.	iNaturalist	FLO
Maxillaria longipetala Ruiz & Pav.	iNaturalist	SVC
Maxillaria longipetiolata Ames & C. Schweinf.	*Perdomo O. 262* (CUVC), *Trujillo E. 1041* (HUAZ)	BEL, FLO
Maxillaria longissima Lindl.	*Perdomo O. 233* (CUVC), *Araujo D. & Trujillo E. 4, Arias T. 1191* (HUAZ)	FLO
Maxillaria mapiriensis (Kraenzl.) L. O. Williams	*Perdomo O. 323* (CUVC), *Arias T. 965* (HUAZ)	FLO, DON
Maxillaria meridensis Lindl.	*Cuatrecasas J. 9121* (COL), *Araujo D. & Trujillo E. 4, Arias T.12078, Chaux-Varela J. 90, Cumaco L. S. & Trujillo E. 32, Pinilla J. et al. 32, Plazas L. L. et al. 37* (HUAZ)	FLO
Maxillaria nasuta Rchb. f.	Living collection (El Manantial, Florencia)	SOL
Maxillaria notylioglossa Rchb. f.	*Perdomo O. 179* (CUVC)	FLO
Maxillaria novoae Molinari	*Perdomo O. 0173* (CUVC)	FLO
Maxillaria nubigena (Rchb. f.) C. Schweinf.	*Correa M & Trujillo E. 4903, Santofimio L. M. & Trujillo E. 16* (HUAZ)	FLO
Maxillaria obtusa (Lindl.) Molinari	*Barbosa C. 7543* (COAH), *Franco-Rosselli P. et al. 3814* (COL, MO)	SOL
Maxillaria parkeri Hook.	*Gentry A. 65290* (COAH, MO) *Arevalo R. 154, 267, 325* (COL), *Prado L. F. 526, 542* (COAH, MO, COL)	SOL
Maxillaria parviflora (Poepp. & Endl.) Garay	*Gentry A. 65290* (COAH, MO) *Arevalo R. 154, 267, 325* (COL) *Arias T. 1001, Chaux-Varela J. 104* (HUAZ)	BEL, DON, FLO, SVC

Species name	Accessions reviewed	Area
Maxillaria pendens Pabst **	Living collection (El Caraño, Florencia)	FLO
Maxillaria pergracilis (Schltr.) Schuit. & M.W. Chase	*Perdomo O. 372* (CUVC)	BEL, FLO
Maxillaria plicata Schltr.	*Arias, T. 1205* (HUAZ)	FLO
Maxillaria porrecta Lindl.	*Perdomo O. 273, 340* (CUVC), *Arias T. 928, 963, 1204, Polania D. & Trujillo E. 6* (HUAZ)	BEL, DON, FLO
Maxillaria proboscidea Rchb. f. **	*Arias T. 850, 868* (HUAZ)	SOL
Maxillaria pterocarpa Barb. Rodr.	*Dodson C. 3247* (SEL)	FLO
Maxillaria ringens Rchb. f.	*Ortiz-Valdivieso M 529* (HPUJ)	FLO
Maxillaria sanantonioensis Christenson *	Living collection (El Caraño, Florencia)	FLO
Maxillaria setigera Lindl.	*Cardenas D. 48631* (COAH)	FLO
Maxillaria soulangeana Molinari	Living collection (El Caraño, Florencia)	BEL
Maxillaria splendens Poepp. & Endl.	*Ortiz-Valdivieso M. 554, 4241* (HPUJ)	FLO
Maxillaria striata Rolfe	*Trujillo E. s.n.* (CUVC)	FLO
Maxillaria subrepens (Rolfe) Schuit. & M. W. Chase	*Arevalo R. 87* (COL)	SOL
Maxillaria tenuis C. Schweinf.	*Arevalo R. 85, 362* (COAH, COL)	BEL, SOL
Maxillaria uncata Lindl.	*Arevalo R. 213* (COAH), *Arias, T. 915* (HUAZ)	SOL
Maxillaria villosa (Barb. Rodr.) Cogn.	*Prado 508, Restrepo 866* (COAH)	SOL
Maxillaria violaceopunctata Rchb. f.	*Sastre R. D. 5061* (P)	SOL
Miltoniopsis phalaenopsis (Linden & Rchb. f.) Garay & Dunst.	*Cabezas 1752* (JBB)	SVC
Muscarella cryptophyta (Barb.Rodr.) Bogarín & Karremans **	*Arias T. 918* (HUAZ)	FLO
Muscarella samacensis (Ames) Luer	*Ortiz-Valdivieso M. 474* (HPUJ), *Chaux-Varela J. 53* (HUAZ)	FLO
Myoxanthus affinis (Lindl.) Luer	Living collection (El Manantial, Florencia)	SJF
Myoxanthus cimex (Luer & R. Escobar) Luer	*Perdomo O. 266, 415* (CUVC)	FLO
Myoxanthus merae (Luer) Luer **	*Arias T. 1020* (HUAZ)	SVC
Myoxanthus monophyllus Poepp. & Endl.	*iNaturalist*	SVC
Myoxanthus reymondii (H. Karst.) Luer	*Arias T. 974, Chaux-Varela J. 86* (HUAZ)	DON
Myoxanthus xiphion Luer	*Perdomo O. 180, 414* (CUVC)	FLO
Notylia barkeri Lindl. **	*Arias T. 846, 847* (HUAZ)	SOL
Notylia platyglossa Schltr.	*Perdomo O. 271* (CUVC)	VAL
Notylia sagittifera (Kunth) Link, Klotzsch & Otto	iNaturalist	MIL
Octomeria colombiana Schltr.	*Trujillo E. 1039* (COAH, HUAZ), *Arias T.973, Chaux-Varela J. 87* (HUAZ)	DON, BEL
Octomeria erosilabia C. Schweinf.	*Arevalo R 84* (COL), *Arevalo R. 242, van der Wal 231 M.* (COAH), *Vasco A. 242, 255* (HUA)	SOL
Octomeria exigua C. Schweinf.	*Arevalo R. 356* (COL), *Gonzalez M. F. 2693* (COAH, COL)	FLO, SOL
Octomeria grandiflora Lindl.	*Arevalo R. 367* (COL), *Mesa N. & Trujillo E. 07* (HUAZ)	FLO, SOL
Octomeria minor C. Schweinf.	*Vasco A. 188, 203* (COL)	SOL
Octomeria scirpoidea (Poepp. & Endl.) Rchb.f.	*Cardenas D. 6854* (COAH), *Arevalo R. 273* (COL), *Vasco A. 202* (HUA)	SOL
Octomeria surinamensis H. Focke	*Arevalo R. 90, 152, 246, 266, 348* (COL)	SOL
Octomeria taracuana Schltr.	*Velayos 6421* (MA), *Franco-Rosselli P. 4148* (COL)	SOL
Octomeria tridentata Lindl.	*Dodson C. 3245* (SEL)	FLO
Odontoglossum paniculatum Dalström & Deburghgr.	iNaturalist	SVC
Oliveriana brevilabia (C. Schweinf.) Dressler & N.H. Williams	iNaturalist	SVC

Species name	Accessions reviewed	Area
Oncidium abortivum Rchb. f.	*Betancur J. 2197* (HUA)	SVC
Oncidium alexandrae (Bateman) M. W. Chase & N.H. Williams	*Luteyn J. L. et al. 4958*, *Sanin D. 6395* (COL), *Calderon A. 248* (HUAZ), *Gentry A. el at. 9183* (MO)	FLO, PRC
Oncidium baueri Lindl.	*Trujillo E. 549* (COAH, HUAZ), *Calderon A. 249 Arias T. 995, 1214* (HUAZ)	DON, FLO, SOL
Oncidium citrinum Lindl.	*Ortiz-Valdivieso M 550* (HPUJ)	FLO
Oncidium eliae (Rolfe) M. W. Chase & N. H. Williams	*Perdomo O. 409* (CUVC)	FLO, PRC
Oncidium ensatum Lindl. **	iNaturalist	SVC
Oncidium fuscatum Rchb. f.	*Correa M. et al. 5113* (HUAZ)	FLO
Oncidium gramineum (Poepp. & Endl.) M. W. Chase & N. H. Williams	*Perdomo O. 362, 3623* (CUVC), *Arias T. 920, Chaux-Varela J. 52* (HUAZ)	BEL, FLO
Oncidium orthotis Rchb. f.	*Perdomo O.* 348, 405 (CUVC)	BEL, PRC
Oncidium poikilostalix (Kraenzl.) M. W. Chase & N. H. Williams	iNaturalist	SVC
Oncidium putumayense (P. Ortiz) *M. W. Chase & N. H. Williams*	iNaturalist	SVC
Oncidium sphacelatum Lindl.	*Betancur J. 1666* (HUA)	SVC
*Ornithocephalus bryostachys Schltr. **	*Hoyos F. s.n.* (HUAZ)	FLO
Otoglossum globuliferum (Kunth) N. H. Williams & M. W. Chase	*Cardenas D. 48646* (COAH)	FLO
Otoglossum serpens (Lindl.) N. H. Williams & M. W. Chase	*Ramirez J. G. 5204* (COAH), *Perdomo O. 249, Trujillo E. 7623* (CUVC)	FLO
Palmorchis guianensis (Schltr.) C. Scweinf. & Correll	*Duivenvoorden J. 949* (MO, COAH)	SOL
Palmorchis puber (Cogn.) Garay	*Cardenas D. 48406, Castro F. 11280* (COAH)	SOL, SVC
Paphinia cristata (Lindl.) Lindl.	*Trujillo E. 3858* (HUAZ)	SOL
Paphinia lindeniana Rchb. f.	*Bernal R. 533* (COL)	SJF
Peristeria guttata Knowles & Westc.	*Sanchez M. 28* (HUAZ)	CAR
Platystele alucitae Luer	*Sanin D.* 6490 (COAH)	FLO
Pleurothallis bivalvis Lindl.	*Arias, T. 972* (HUAZ)	DON, FLO
Pleurothallis bicornis Lindl.	*Arias T. 1229* (HUAZ)	FLO
Pleurothallis chloroleuca Lindl.	iNaturalist	SVC
Pleurothallis cordata (Ruiz & Pav.) Lindl.	*Perdomo O.* 422, 398 (CUVC), *Arias T. 1221* (HUAZ)	FLO, PRC
Pleurothallis discoidea Lindl.	*Arias, T. 953* (HUAZ)	PAU
Pleurothallis languida Luer & R. Escobar	iNaturalist	SVC
Pleurothallis manicosa Luer & R. Escobar	iNaturalist	BEL
Pleurothallis matudana C. Schweinf.	Living collection (El Manantial, Florencia)	SJF
Pleurothallis microcardia Rchb.f.	*Betancur J. 20415* (COAH)	BEL, SVC
Pleurothallis octavioi Luer & R. Escobar	*Arias T. 1192* (HUAZ)	FLO, SVC
Pleurothallis phalangifera (C. Presl) Rchb. f.	*Trujillo E. 7946* (CUVC)	FLO
Pleurothallis pruinosa Lindl	iNaturalist	BEL
Pleurothallis ruberrima Lindl.	*Jimenez E. 33* (COAH)	FLO
Pleurothallis ruscifolia (Jacq.) R. Br. in W. T. Aiton	*Castaño N. 9230* (COAH)	BEL, FLO
Pleurothallis sandemanii Luer	Living collection (El Caraño, Florencia)	FLO
Pleurothallis sphaerantha Luer **	Living collection (El Manantial, Florencia)	FLO
Polycycnis barbata (Lindl.) Rchb. f.	*Perdomo O. 354, 378* (CUVC)	BEL, FLO
Polyotidium huebneri (Mansf.) Garay	*Benavides A. 1292* (HUA)	SOL
Polystachya foliosa (Hook.) Rchb.f. in Walp.	*Cardenas D. 24841, Rodriguez W. D. 6973, Sanin D. 6465* (COAH), *Arias T. 855, 877, 1002, Trujillo E. & Marin 183, Cumaco L. S. & Trujillo E. 23, Trujillo E. et al. 1512* (HUAZ)	CAR, FLO, SOL, SVC

Species name	Accessions reviewed	Area
Polystachya stenophylla Schltr.	*Trujillo E. et al. 824, Mesa N. & Trujillo E. 8* (HUAZ)	CAR, MON
Ponthieva fertilis (F. Lehm. & Kraenzl.) Salazar	iNaturalist	SVC
Prescottia cordifolia Rchb.f.	*Diaz J. 369* (COAH)	PRC
Prescottia stachyodes (Sw.) Lindl.	*Cuatrecasas J. 9070* (COL)	FLO
Prosthechea aemula (Lindl.) W. E. Higgins	*Romero R. 4136* (COL, MO)	CAR
Prosthechea chimborazoensis (Schltr.) W. E. Higgins	*Mendoza H. 497* (FMB)	SOL
Prosthechea cochleata (L.) W. E. Higgins	iNaturalist	SVC
Prosthechea crassilabia (Poepp. & Endl.) Carnevali & I. Ramírez	*Stevenson P. 961* (COAH), *Arias T. 994* (HUAZ)	FL, PAU, SVC
Prosthechea grammatoglossa (Rchb.f.) W. E. Higgins	*Arias, T. 1018* (HUAZ)	SVC
Prosthechea pygmaea (Hook.) W. E. Higgins	iNaturalist	SVC
Prosthechea tigrina (Linden ex Lindl.) W. E. Higgins	Living collection (El Caraño, Florencia)	FLO, SVC
Prosthechea venezuelana (Schltr.) W. E. Higgins	Living collection (El Manantial, Florencia)	N/A
Prosthechea vespa (Vell.) W. E. Higgins	*Arevalo R. 198, Castaño N. 8544, Cardenas D. 48640 (COAH), Perdomo O. 253, 367* (CUVC), *Santofimio L. M. & Trujillo E. 8, 15* (HUAZ)	BEL, FLO, SOL
Psilochilus macrophyllus (Lindl.) Ames	*Betancur J. 20322, Castaño N. 7500, 8785* (COAH)	BEL
Psychopsis sanderae (Rolfe) Lückel & Braem	Living collection (El Manantial, Florencia)	NA
Pterostemma escobarii (Dodson C.) M. W. Chase & N. H. Williams	iNaturalist	SVC
Rodriguezia bracteata (Vell.) Hoehne	Living collection (El Manantial, Florencia)	ALB, BEL, FLO, SJF
Rodriguezia claudiae Chiron **	iNaturalist	SJF
Rodriguezia chasei Dodson & D. E. Benn.	iNaturalist	SVC
Rodriguezia lanceolata Ruiz & Pav.	*Diaz et al. 101* (UDBC)	FLO, SOL
Rudolfiella floribunda (Schltr.) Hoehne	*Ortiz-Valdivieso M. 999* (HPUJ)	PRC
Rudolfiella picta (Schltr.) Hoehne	*Perdomo O. 280, 343* (CUVC)	BEL, FLO
Sacoila lanceolata (Aubl.) Garay	*Castro F. 67608* (COAH)	PRC
Sarcoglottis neillii Salazar & Tobar **	*Calderon A. 264* (HUAZ)	FLO
Scaphosepalum cimex Luer & Hirtz **	Living collection (El Caraño, Florencia)	FLO
Scaphyglottis aurea (Rchb.f.) Foldats	*Velayos 6870* (COL)	SOL
Scaphyglottis bidentata (Lindl.) Dressler	*Giraldo 3311* (COAH), *Estrada 666, Velayos 6514* (COL)	BEL, SJF
Scaphyglottis boliviensis (Rolfe) B. R. Adams	*Perdomo O. 428* (CUVC), *Arias T. 871, 903* (HUAZ)	BEL, FLO, CAR
Scaphyglottis caquetana Szlach. & Kolan. *	*Cardenas D. et al. 6899* (COAH)	SJF
Scaphyglottis graminifolia (Ruiz & Pav.) Poepp. & Endl.	*Perdomo O. 418* (CUVC), *Arias T. 905, Chaux-Varela J. 37* (HUAZ)	FLO, SJF, SOL
Scaphyglottis imbricata (Lindl.) Dressler	Living collection (El Manantial, Florencia)	SJF
Scaphyglottis longicaulis S. Watson	*Cumaco L. S. & Trujillo E. 7, Mesa N. & Trujillo E. 2, Santofimio & Trujillo E. 11* (HUAZ)	BEL, SJF
Scaphyglottis obtusisepala Szlach. & Kolan. *	*Trujillo E. 1042* (COAH)	BEL
Scaphyglottis prolifera (Sw.) Cogn.	*Aguilar M. 251* (COAH)	FLO
Scaphyglottis punctulata (Rchb. f.) C. Schweinf.	*Trujillo E. 7664, 7863* (CUVC), *Arias T. 966, 1200, 1209* (HUAZ)	DON, FLO, PRC
Scaphyglottis stellata Lodd. ex Lindl.	*Cardenas D. 48550, 6932, Gonzalez M. F. 2617, Rodriguez M. 3641, Stevenson P. 1399, Velayos M. 6412* (COAH), *Arevalo R. 88* (COL), *Trujillo E. 885* (HUA), *Arias T. 869, 905, 962, Chaux-Varela J. 42* (HUAZ), *Cardenas D. 6932* (MO)	CAR, DON, FLO, SJF, SOL, SVC
Sertifera purpurea Lindl. & Rchb.f.	*Sanin D. 6098* (COAH)	FLO
Sobralia biflora Ruiz & Pav.	*Trujillo E. 887* (HUAZ)	SJF

Species name	Accessions reviewed	Area
Sobralia crocea (Poepp. & Endl.) Rchb. f.	*Cardenas D. 42426* (FBM, COAH), *Betancur J. 20496* (COAH), *Trujillo E. 7985* (CUVC)	BEL, FLO
Sobralia decora Bateman	*Arevalo R. 346* (COAH)	SOL
Sobralia fimbriata Poepp. & Endl.	*Perdomo O. 337* (CUVC)	BEL
Sobralia fragrans Lindl.	*Palacios P. 2578* (COL), *Castaño N. 7582, Cardenas D. 46381, Betancur J. 20594* (FMB)	BEL, SOL
Sobralia granitica G. A. Romero-Gonzalez MF & Carnevali	*Castro F. 10841* (COAH), *Arias T. 1015* (HUAZ)	SOL, SVC
Sobralia klotzscheana Rchb. f.	*Betancur J. 20458* (COAH), *Romero R. 4053* (COL), *Arias T. 991, 1015* (HUAZ)	BEL, PAU
Sobralia leucoxantha Rchb. f.	*Polania D. & Trujillo E.* 4 (HUAZ)	FLO
Sobralia liliastrum Lindl.	*Arbelaez E. 326, Cardenas D. 4135, Palacios P. 1164* (COAH), *Franco-Rosselli P. 3237, 2417, 3718* (COL), *Cumaco L. S. & Trujillo E. 33, Pabon M. 971* (HUAZ), *Cardiel J. M.* 1010 (MA)	FLO, SOL
Sobralia macrophylla Rchb. f	*Cuatrecasas J. 9119, Fernandez A. 20079* (COL), *Vasco A. 306* (HUA), *Mesa N. & Trujillo E.* 06, 22 (HUAZ)	FLO, SOL
Sobralia roezlii Rchb. f.	iNaturalist	FLO
Sobralia sessilis Lindl.	Living collection (El Manantial, Florencia)	BEL
Sobralia violacea Linden ex Lindl	*Barbosa C. 8109, Gonzalez M. F. 2270, Palacios P. 2932, 2880* (COL)	SOL
Sobralia virginalis Peeters & Cogn. In Cogn. & Goos.	iNaturalist	FLO, SVC
Specklinia grobyi (Lindl.) F. Barros	*Escobar R. 5051* (MO)	SVC
Specklinia picta (Lindl.) Pridgeon & M. W. Chase	*Cardenas D. et al. 48247* (COAH), *Arevalo R. 217* (COL)	SOL, SVC
Stanhopea candida Barb. Rodr.	*Arias T. 854* (HUAZ)	SOL
Stelis aviceps Lindl.	*Cardenas D. et al. 41680* (COAH), *41773* (FMB)	BEL
Stelis kefersteiniana (Rchb.f.) Pridgeon & M. W. Chase	iNaturalist	SOL
Stelis lindenii Lindl.	*Ortiz-Valdivieso M. 536* (HPUJ)	BEL
Stelis oblonga (Ruiz & Pav.) Willd.	*Sanin D. 6492* (COAH, HUA)	FLO
Stelis purpurea (Ruiz & Pav.) Willd.	*Perdomo O. 268, 315* (CUVC)	FLO, SVC
Stelis superbiens Lindl.	*Perdomo O. 368* (CUVC)	BEL
Stenia pallida Lindl.	*Arias, T.* 913, 987 (HUAZ)	SJF, DON
Telipogon pogonostalix Rchb. f.	*Arias, T. 981* (HUAZ)	DON
Telipogon polymerus Rchb. f. *	*Trujillo E. 7636, Perdomo O. 403* (CUVC)	FLO, PRC
Telipogon selbyanus N. H. Williams & Dressler **	*Perdomo O. 418* (CUVC)	FLO
Trichocentrum cebolleta (Jacq.) M. W. Chase & N. H. Williams	*Arias T. 909, 1000, 1010, Chaux-Varela J. 40* (HUAZ)	DON, FLO, SVC
Trichocentrum helicanthum (Kraenzl.) J. M. H. Shaw	Living collection (El Manantial, Florencia)	N/A
Trichocentrum nanum (Lindl.) M.W. Chase & N. H. William	Living collection (El Manantial, Florencia)	SVC
Trichocentrum nudum (Bateman ex Lindl.) M. W. Chase & N. H. Williams	Living collection (El Manantial, Florencia)	FLO
Trichocentrum pulchrum Poepp. & Endl.	*Perdomo O. 276* (CUVC)	FLO
Trichosalpinx orbicularis (Lindl.) Luer	*Franco-Rosselli P. 4179, Palacios P. 2450, Arevalo R. 341* (COL), *Cardenas D. 42195* (FMB)	BEL, PRC, SOL
Trizeuxis falcata Lindl.	iNaturalist	BEL
Tubella multicuspidata (Rchb.f.) Archila	*Cardenas D. et al. 41704* (COAH)	BEL
Tubella pusilla (Kunth) Archila	*Arias T. 870* (HUAZ), *Perdomo O. 397* (CUVC)	CAR, PRC
Vanilla bicolor Lindl.	*Idobro J. M. 11423* (COAH)	SOL

Species name	Accessions reviewed	Area
Vanilla guianensis Splitg.	*Barona A. 4863 5192* (COAH)	CAR, SOL
Vanilla odorata C. Presl.	*Barona A. 4864* (COAH)	SOL
Vanilla palmarum (Salzm. ex Lindl.) Lindl.	*Barona 4620, Cardenas D. et al. 48604* (COAH)	BEL, SVC
Vanilla penicillata Garay & Dunst. in Dunst. & Garay	*Franco-Rosselli P. 4258* (COL)	SOL
Vanilla pompona Schiede	*Cardiel J. M. 1089* (COL)	SOL
Vanilla sprucei Rolfe	*Barona A. 3124, Duivenvoorden J. 719, Restrepo D. 441* (COAH)	SOL
Vanilla trigonocarpa Hoehne	*Barona A. 3125, 4611, 4612, 4613, 4615, 4616, 4617, 4618, 4619* (COAH)	BEL
Warczewiczella amazonica Rchb. f. & Warsz.	*Alzate F. 980* (FAUC)	MIL
Wullschlaegelia calcarata Benth.	*Cardenas D. et al. 48513* (COAH), *Blanco M. et al. 233* (COAH, HUAZ)	FLO
Xerorchis amazonica Schltr.	*Barona A. 1483* (COAH)	SOL
Xerorchis trichorhiza (Kraenzl.) Garay	*Franco-Rosselli P. 4240* (COL)	SOL
Xylobium foveatum (Lindl.) G. Nicholson	*Perdomo O. 324* (CUVC)	FLO
Xylobium leontoglossum (Rchb. f.) Rolfe	*Trujillo E. et al. 7867* (CUVC)	FLO

Field expeditions

To expand the checklist of Orchidaceae that occur in Caquetá, we carried out a total of 12 field expeditions between 2019 and 2023 for the project "Orquídeas para la Paz." Two expeditions explored part of the Alto Fragua Indi Wasi National Natural Park in collaboration with the Park and ten expeditions explored montane, premontane forests and lowland Amazonian Forest of the Department. Fertile specimens were collected and prepared for herbaria according to techniques used for orchid collections, that includes the preservation of flowers in spirit collections, photographs and tissue collections for ongoing DNA analyses. The specimens were deposited at either the Universidad de la Amazonía (HUAZ) or the Universidad del Valle (CUCV) Herbaria (acronyms according to Thiers 2020). Duplicate collections were made for other herbaria when possible. Living specimens, collected when flowers were not found, were taken to local nurseries at El Caraño, Florencia, located at 950 m a.s.l. for cold weather orchids, or El Manantial, Florencia, located at 300 m a.s.l. for warm weather orchids. Once they flowered, they were photographed, identified and herbarium specimens were made. All collections were deposited under the collection permit of the Universidad de la Amazonia (permit number 01691 October 2020; Indi Wasi National Park memorandum No. 20182200004943) by Alexis Calderón, Marco Correa and Edwin Trujillo.

Resources used

Databases and herbaria were used to find herbarium specimens that were examined to back-up observations without vouchers. Available literature, as well as local, regional and national catalogues were used to find herbarium specimens collected in the region. Only records with a herbarium specimen were considered for this checklist; living specimens and iNaturalist records by one of the authors or collaborators and with a specialist identification were considered in the list, but only as "tentative" until the herbarium collection is available.

To carry out online consultations in herbaria, search criteria were considered using the keywords: "Caquetá", "Orchidaceae", "tropical humid forest", "botanical expeditions", "Amazon region" and "Caquetá River." The "advanced search" option was used for most of the herbaria consulted, since it allows for a more direct search for information. International herbaria consulted, either in person or online, included: Harvard University Oak Ames Herbarium (AMES), Herbario del Instituto Chinoin (AMO), Berlin (B), Royal Botanic Gardens Kew Herbarium (KEW), University of California, Los Angeles Herbarium (LA), the Real Jardín Botánico de Madrid (MA), Naturalis Biodiversity Center (NL), Herbarium Utrech (U), New York Botanical Garden (NY), the Muséum national d´Histoire naturelle in Paris (P), Marie Selby Botanical Gardens (SEL), Tropicos (2002) of the Missouri Botanical Garden (MO), Gdansk University (UGDA), University of Florida Herbarium (USF), W-Reichenbach (Vienna) and University of Wisconsin Herbarium (WIS).

Colombian herbaria included: Instituto Amazónico de Investigaciones Científicas – SINCHI (COAH), Herbario Nacional Colombiano (COL), Herbario de la Universidad del Cauca (CAUP), Herbario de la Universidad del Valle (CUCV), Herbario de la Universidad de Caldas (FAUC), Herbario Federico Medem-Bogotá (FMB), Herbario de la Pontificia Universidad Javeriana (HPUJ), Herbario de la Universidad de Antioquia (HUA), Herbario Enrique Forero (HUAZ) de la Universidad de la Amazonia, Jardín Botánico José Celestino Mutis de Bogotá (JBB), Universidad de los Llanos (LLANOS), Universidad de Nariño (PSO), Universidad Surcolombiana (SURCO), Herbario Forestal de la Universidad Distrital Francisco José de Caldas (UDBC) and Universidad Pedagógica y Tecnológica de Colombia (UPTC). Other checked databases included GBIF (Global Biodiversity Information Facility, 2022), IDigBio (Integrated Digitized Biocollections) and BRAHMS at Marie Selby Botanical Gardens (Software for Natural History management).

Name validation and data curation

Correct scientific names of species were assigned, based on the World Flora Online (WFO 2022), except for the genus *Tubella* (Luer) Archila, which was accepted as valid following Bogarín et al. (2018). All names were supported by herbarium specimens, photographs uploaded on iNaturalist (www.inaturalist.com) or living collections in one of the local nurseries that supported their presence in Caquetá with reliable taxonomic determination.

All records obtained from herbaria, databases and literature were carefully curated regarding their scientific name, locality, collector and collection number. For localities, names of municipalities were verified and updated. To assign a name to duplicates with different identification, the provenance of each assigned name was investigated, paying particular attention to plants identified by experts, curators and recognised taxonomists, besides using the date of determination and its citation in a publication. Lastly, using photographs and a list of taxonomic groups within orchids, we reached out to as many specialists as possible for their species expertise (see Acknowledgements). This final dataset was used for analyses.

Data analysis

Collection records were georeferenced as precisely as the information allowed, since in many records, the location is not clearly specified, a frequent

situation in orchids, old collections and those made by amateurs. Due to the lack of standardised geographical coordinates, only the number of species in municipalities is reported for this study. Georeferenced records and species distribution maps were constructed for the 16 municipalities and are available upon request.

Results

A total number of 228 fertile specimens were collected in the field (collections made by Arias T., Chaux-Varela J., Perdomo O., Trujillo E. and Correa M.), 692 herbarium specimens were reviewed in different herbaria, 100 photographs and two living collections accessed for specimen identifications. The most abundant species in the field were *Epidendrum nocturnum* Jacq., *E. lacustre* Lindl., *Maxillaria discolor* (G. Lodd. ex Lindl.) Rchb. f. and *Scaphyglottis stellata* Lodd. ex Lindl. Some of the rarest ones only observed in the field once were *Cyrtochilum caquetanum* P. Ortiz, L. E. Álvarez & A. J. Carrillo, *Masdevallia ensata* Rchb. f. and *Paphinia cristata* (Lindl.) Lindl. In "Orquídeas para la Paz" expeditions, 98 species (collections made by Arias T. and Chaux-Varela J.) representing 29 genera were collected. Living individuals that were not flowering in the field were brought to El Manantial (300 m a.s.l.) and El Caraño (950 m a.s.l.) both located in the Municipality of Florencia. Herbaria collections are actively being made once orchids start flowering. A total of 55 species are available at El Manantial and 60 at El Caraño.

We report 418 species belonging to 98 genera represented in 744 herbarium collections including duplicates. Eighty-two species are new reports for Caquetá since they have not been vouchered until this study (Table 1, collections exclusively made by one of the authors of this paper). The most species-rich genera were *Epidendrum* L. (68 spp.), *Maxillaria* Ruiz & Pav. (59 spp.), *Pleurothallis* R.Br. (16 spp.), *Elleanthus* C. Presl (14 spp.), *Sobralia* Ruiz & Pav. (14 spp.) (Table 1, Figs 2–5). Most genera found in Caquetá (75) have one to three species (Fig. 5). We found two introduced species around urban areas of Florencia, *Arundina graminifolia* (D. Don) Hochr. and *Dendrobium nobile* Lindl.; these were not included in the species list.

Eighty-one species are included as "tentative" because they have been accurately identified, but lack a herbarium voucher. Fifty-three out of these 81 were included as potentially distributed in the Caquetá because records produced by the authors and collaborators in the field through photographs were not documented with herbarium vouchers. Such photographic records were submitted to iNaturalist (see https://www.inaturalist.org/projects/orquideas-del-caqueta). Twenty-seven species including 15 in El Manantial and 12 in El Caraño, are part of our living collections. They were collected fertile in the field and identified, but have not been photographed or documented with herbarium vouchers to date.

For the Municipality of Florencia, 192 species were recorded, followed by Solano with 108 and Belén de los Andaquíes with 77 (Fig. 4). Five municipalities including Albania, Morelia, Valparaíso, Milán and La Montañita have three or less records and there are no orchid botanical collections for Curillo and Solita (Table 1). Fourteen species are endemic to Colombia and from those, 11 have new herbarium vouchers made in this project. Twenty nine are new reports for Colombia and 15 of those have new herbarium vouchers as a result of this

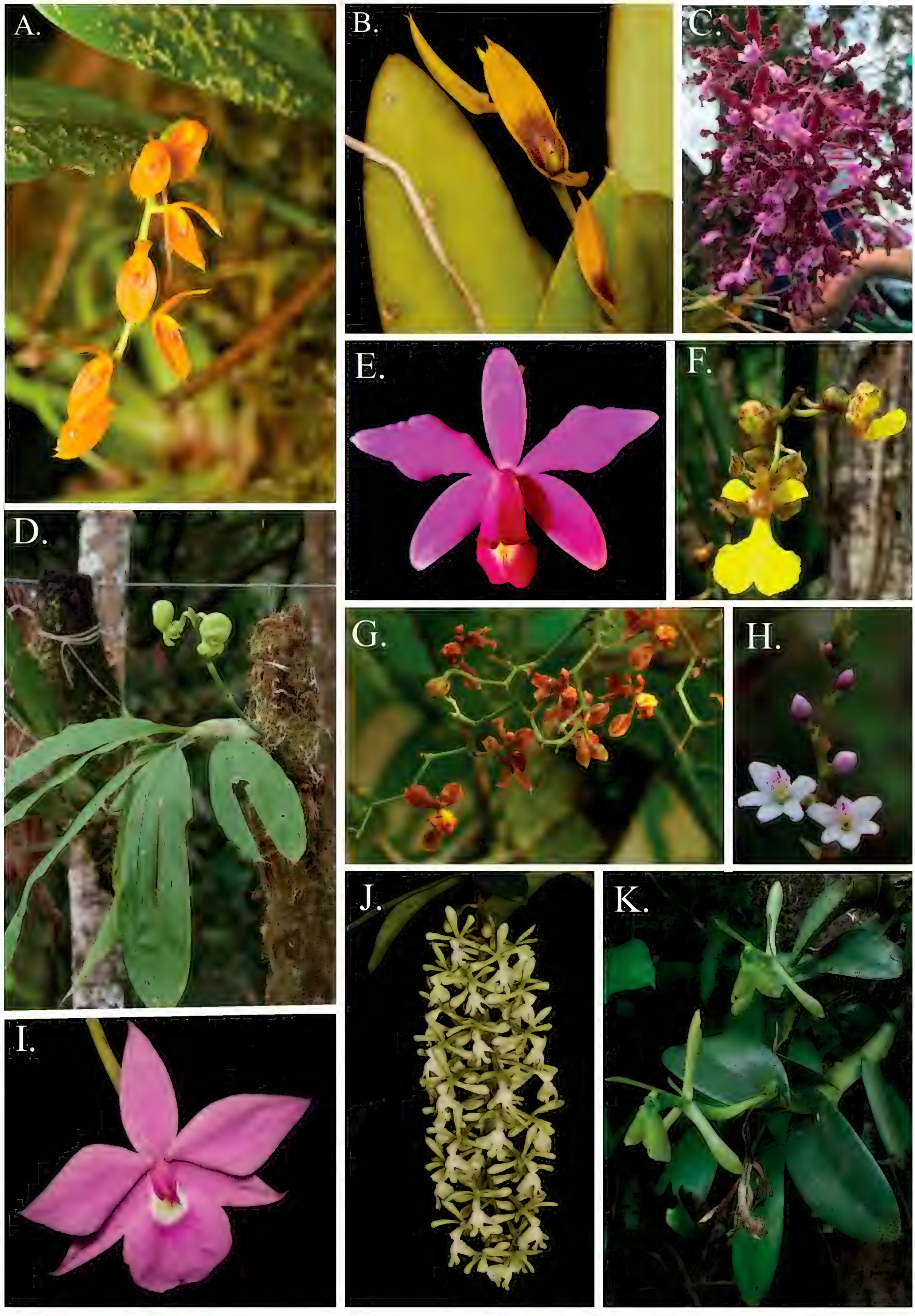

Figure 2. Representative Orchidaceae species from Caquetá, Colombia. **A** *Acianthera casapensis* **B** *Acianthera ciliata* **C** *Laelia rosea* **D** *Catasetum tuberculatum* **E** *Cattleya violacea* **F** *Trichocentrum nudum* **G** *Cyrtochilum porrigens* **H** *Epidendrum fimbriatum* **I** *Dimerandra emarginata* **J** *Epidendrum coronatum* **K** *Epidendrum difforme.*

Figure 3. Representative Orchidaceae species from Caquetá, Colombia. **A** *Galeandra macroplecta* **B** *Maxillaria aureoglobula* **C** *Maxillaria egertoniana* **D** *Maxillaria equitans* **E** *Maxillaria parkeri* **F** *Maxillaria parviflora* **G** *Notylia barkeri* **H** *Oncidium alexandrae* **I** *Octomeria grandiflora* **J** *Prosthechea chimborazoensis* **K** *Stanhopea candida* **L** *Sobralia macrophylla*.

project (Table 1). *Masdevallia virgo-cuencae* Luer & Andreetta (VU), *Miltoniopsis phalaenopsis* (Linden & Rchb. f.) Garay & Dunst. (VU) and *Oncidium alexandrae* (Bateman) M. W. Chase & N. H. Williams (EN) were included in the Red List of Colombian orchid species (Calderón-Sáenz 2007).

Most collections made in Caquetá have been deposited at HUAZ, which currently holds 210 orchid specimens, while COAH holds 207 orchid specimens and COL 109 orchid specimens. Seven international herbaria had between 1–12 collections from Caquetá (Table 1).

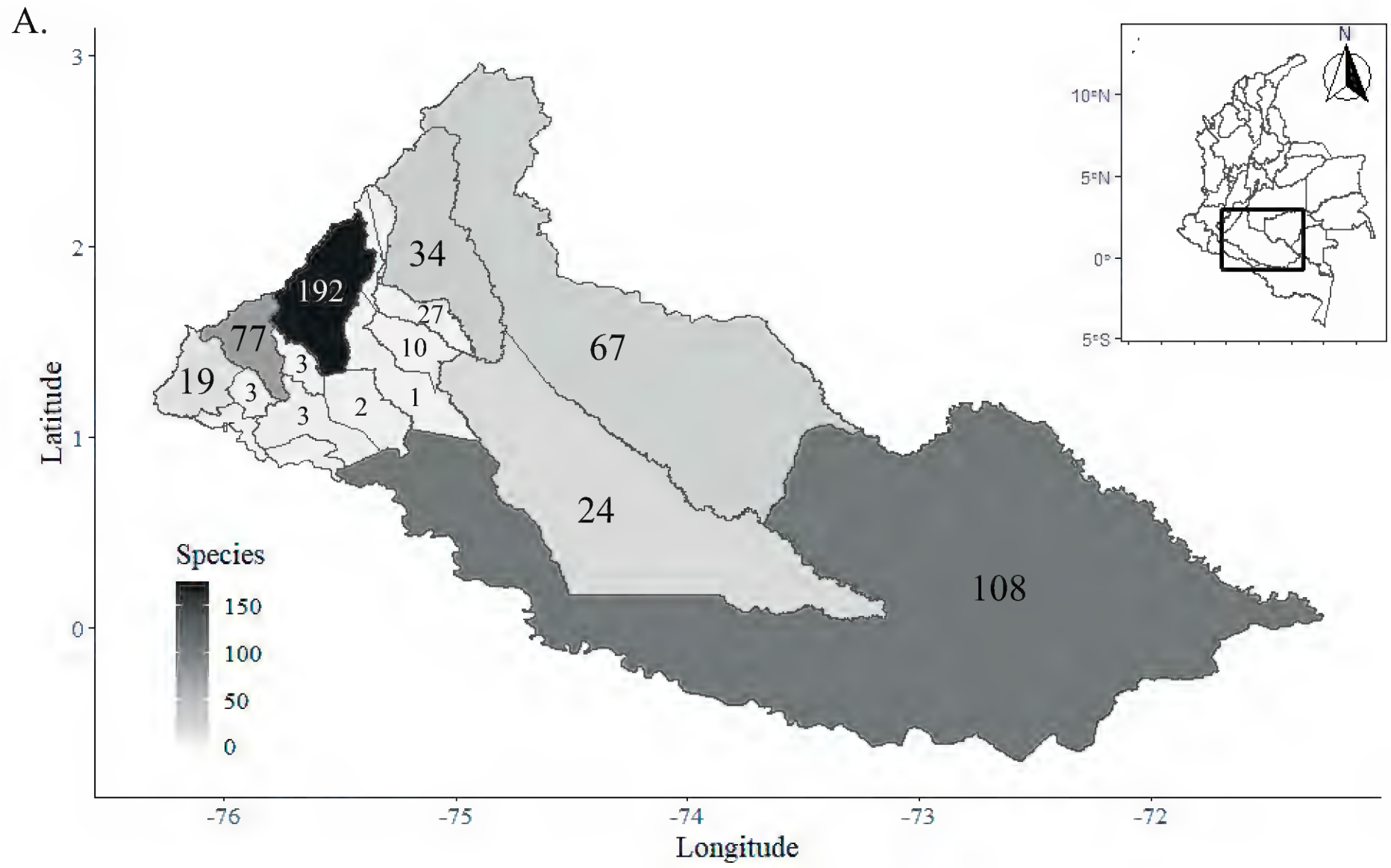

Figure 4. Distribution of orchid species number in Caquetá municipalities. **A** Orchid species distribution by municipality and a heatmap of species richness found in each of the municipalities **B** Number of orchid species found in each municipality and their geographic position (Andean Piedmont or Amazonian Basin).

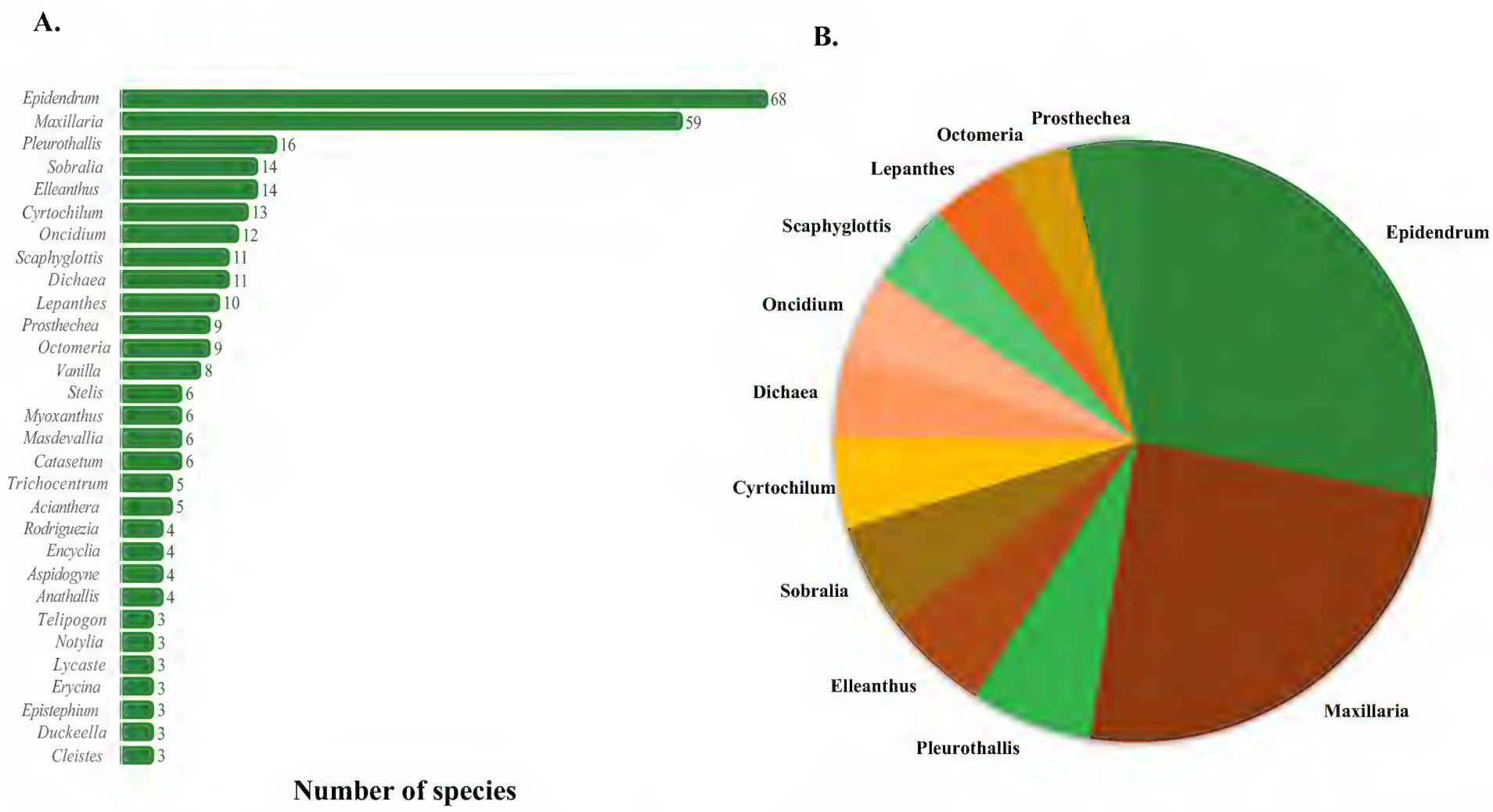

Figure 5. Number of orchid species in most abundant genera of Caquetá, Colombia **A** number of species in the most species rich genera of Caquetá **B** pie chart showing the proportion of species in genera with 9 to 70 species.

Discussion

A total of 276 new species records of Orchidaceae were added to the previous orchid report of Betancur et al. (2015), who cited 142 species. The great diversity of Orchidaceae species in Caquetá might be explained by spatial heterogeneity and phytophysiognomies in this region (Etter et al. 2006). The significant diversity of *Epidendrum* (68/1000) and *Maxillaria* (59/570) was expected because these are some of largest Neotropical Orchidaceae genera with regards to species number (Fig. 5, Suppl. material 1: table S1). The four most species-rich genera account for 40% of the total species, but they represent 4.12% of the total genera. Forty-three genera included only one species for the region, which corresponds to 19% of the total species and 42% of the total genera. Species in genera, such *Encyclia* Hook. and *Stelis* Sw., were challenging to identify and additional taxonomic work is required. One widely distributed and unpublished hybrid *Epidendrum* × *communis* Hágsater Ined. was added to the list after specialist advice (Hágsater, pers. comm.)

During the construction of this list, we left out collections made by Werner Hopp (Schlechter 1924) since they were collected in Putumayo in 1921 and 1922 when Putumayo was part of the Caquetá intendancy. In 1991, Putumayo was politically recognised as a Department and, as such, it is no longer part of Caquetá. Additionally, some species collected by Hopp were deposited in the Berlin Herbarium (B) and destroyed during Second World War (Suppl. material 1. table S2).

Most orchid species documented in Caquetá are found in the Florencia Municipality (192 spp.). This could be explained by the convenience of collecting around cities and the wide altitudinal gradient in this municipality. We present collections numbers by municipality because conservation strategies might differ between political boundaries in Colombia. Regional Autonomous Corporations (CAR) are the main environmental authority. They are responsible for im-

plementing policies and plans from the Ministry of Environment and are granted administrative and financial autonomy. Entities responsible for the formulation of such conservation strategies might benefit more from having such information presented following Departmental divisions. By depositing 140 herbarium specimens at HUAZ (duplicates will be sent to other herbaria) in the framework of this study, we substantially increased its orchid collection to 210 species, positioning HUAZ as the first local herbarium with more herbarium collections from Caquetá than any other herbaria (Fig. 6, Suppl. material 1: table S1).

Five of the municipalities of Caquetá, representing ~ 20% of the total geographical area of the Department, had zero to three herbarium collections or species reported (Fig. 4). The areas in the north-eastern part of the eastern Andean Mountain range still need extensive exploration. These areas include the National Natural Park Cordillera de Los Picachos, where landmines were

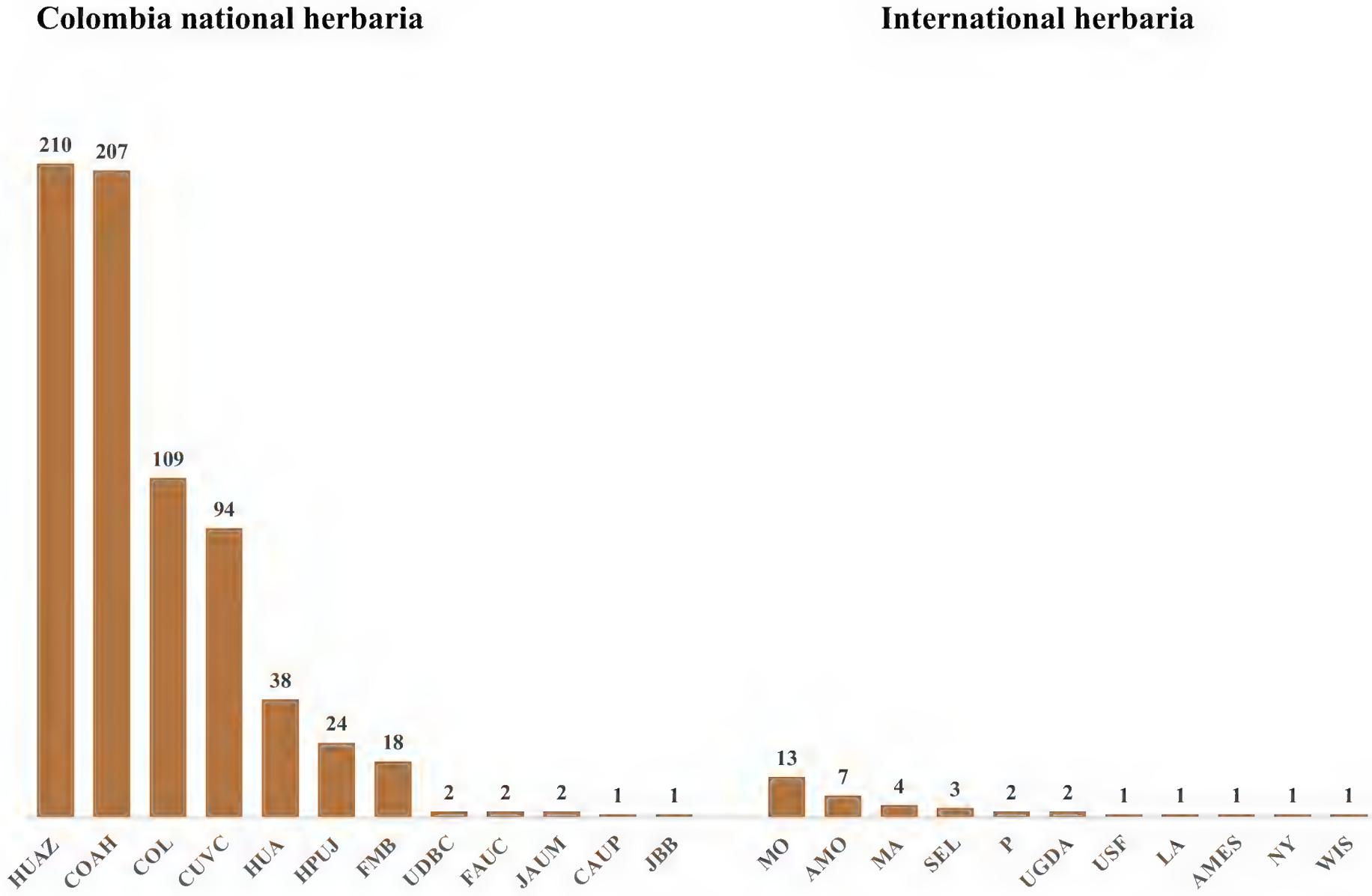

Figure 6. Number of orchid species in the Colombian national herbaria and international herbaria. Instituto Amazónico de Investigaciones Científicas – SINCHI (COAH), Herbario Nacional Colombiano (COL), Herbario de la Universidad del Cauca (CAUP), Herbario de la Universidad del Valle (CUCV), Herbario de la Universidad de Caldas (FAUC), Herbario Federico Medem-Bogotá (FMB), Herbario de la Pontificia Universidad Javeriana (HPUJ), Herbario de la Universidad de Antioquia (HUA), Herbario Enrique Forero (HUAZ) de la Universidad de la Amazonia, Jardín Botánico José Celestino Mutis de Bogotá (JBB), Universidad de los Llanos (LLANOS), Universidad de Nariño (PSO), Universidad Surcolombiana (SURCO), Herbario Forestal de la Universidad Distrital Francisco José de Caldas (UDBC), and Universidad Pedagógica y Tecnológica de Colombia (UPTC).Harvard University Oak Ames Herbarium (AMES), Herbario del Instituto Chinoin (AMO), Berlin (B), Royal Botanic Gardens Kew Herbarium (KEW), University of California, Los Angeles Herbarium (LA), the Real Jardín Botánico de Madrid (MA), Naturalis Biodiversity Center (NL) - Botany (Herbarium Utrech), New York Botanical Garden (NY), the Herbier Museum Paris of the Museum National D´Histoire Naturelle (P), Marie Selby Botanical Gardens (SEL), TROPICOS database (access 2022) of the Missouri Botanical Garden (MO), Gdansk University (UGDA), University of Florida Herbarium (USF), W-Reichenbach (Vienna) and University of Wisconsin Herbarium (WIS).

planted by rebel groups during the long armed conflict that lasted for decades and these have not been removed to date. Orchid diversity could significantly increase with the development of intensive exploration in these mountainous ecosystems and a thorough exploration of the Amazonian Forest canopy. For instance, Departments like Antioquia and Huila have been catalogued as having the largest orchid diversity (Betancur et al. 2015); however, these areas of Colombia have not been extensively explored for decades.

During our expeditions, two species *Cattleya violacea* (Kunth) Lindl. and *Trichocentrum lanceanum* (Lindl.) M. W. Chase & N. H. Williams have been found only in La Laguna del Chaira in the Cartagena del Chaira Municipality. We doubt these species have a natural distribution there. Rather, we suspect they were introduced during the massive effort to bring orchids to La Laguna del Chaira during the 1980s, during which "uninformed" reintroductions of non-native species could have taken place.

This checklist places Caquetá as the eighth Department in Colombia in terms of genera diversity (98 genera) from its original position in the National Plan of Orchid Conservation (15th place, 62 genera). As for the ranking in species number for Colombia, Caquetá goes from position 17th (142 spp.) to position 9th (418 spp.) (Betancur et al. 2015). Caquetá has many orchid genera (98/258 in Colombia) with few species each, 76% of genera having around 1–3 species. Each of these genera include a unique clade distributed in a relatively small area of Colombia. This could be of particular interest in conservation, prioritising evolutionary history over species diversity (Arponen 2012). Caquetá would be one of the regions of Colombia where there are more different genera represented in clades than in other Colombian regions. This work supplies valuable evidence to promote conservation efforts and politics for habitat preservation of the Colombia Andean Piedmont.

Caquetá has lost approximately 30% of its original area due to human impacts, such as cattle ranching. National parks in Caquetá make up 65% of the protected remnants. In the last 50 years, expansion of the agricultural frontier for the establishment of grazing lands, wood extraction and illegal coca crops have destroyed many ecosystems, greatly impacting all national parks. Florencia, for example, is currently undergoing consistent expansion of farming lands ultimately leading to the decimation of natural ecosystems (IDEAM 2020).

Conclusion

Our floristic study is a needed contribution towards a better understanding of the diversity of Colombian orchids. The checklist provides a set of freely-available data on orchid diversity in Caquetá. Furthermore, our study is a baseline panorama of orchid species diversity in the Department, identifying groups of interest for further taxonomic work, especially those which have not been monographed. Lastly, the information provided could enhance local conservation strategies for endangered floristic elements in the Department by adding to a more complete overview of the high orchid diversity in the region.

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Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

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Author contributions

Conceptualization: TA. Data curation: TA, JVD, ACT, OP, ETT. Formal analysis: TA, ETT, JVD. Funding acquisition: TA. Investigation: AZT, ETT, MACM, ACT, JCV, TA, MPC, JVD, OP. Methodology: TA, OP, ETT, RACÁ, JCV, MPC, ACT. Project administration: MPC, RACÁ, TA. Supervision: JVD, TA. Validation: TA, OAPE, ACT, AZT, ETT, JVD. Visualization: TA. Writing - original draft: TA. Writing - review and editing: OP, TA, ETT, OAPE, JVD, AZT.

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Data availability

All of the data that support the findings of this study are available in the main text or Supplementary Information.

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Supplementary material 1

Supplementary data

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